

SUMMARY OF THE PHASE TWO INVESTIGATION OF DEAD CREEK, SAUGET/CAHOKIA, ILLINOIS

Phase One of the Illinois EPA investigation of the Dead Creek area between Queeny Avenue and Judith Lane revealed a pattern of high concentrations of organic contaminants in the surface soil of the north end of the ditch, with decreasing values southward; and, high concentrations of approximately five metals and one non-metal in the surface soil of the south end of the ditch, with decreasing values northward.

Phase Two has now been completed. This phase is a determination of the extent of contamination of the sub-surface soil in the ditch area of primary concern (between Queeny Avenue and Judith Lane), as well as of the surface soil, sub-surface soil, and ground-water in all directions away from the main ditch.

Sub-surface soil analyses of the main ditch area paralleled surface analyses, but concentrations were lower, again showing accumulations of organics (mainly PCB's) in the north end and inorganics to the south.

West of the ditch: Surface and sub-surface soil samples were found to contain trace levels of PCB's, but normal levels of inorganics. Ground-water was normal, with the exception of one monitoring well about 50 ft. west of the ditch. This well showed sub-ppm levels of chlorinated aromatics, e.g., monochlorobenzene, dichlorobenzene, chloronitrobenzene, and dichlorophenol.

South of Judith Lane: Surface and sub-surface soil samples of the ditch were all normal for inorganics and organics, with the exception of one area 25 ft. south of Judith Lane and a second area at the Cahokia Street culvert. These two areas showed slightly elevated levels of PCB's, five metals, and one non-metal.

East of the ditch: Surface and sub-surface soil samples were normal with respect to organics and inorganics. One ground-water sample from a well sunk just south of Queeny Avenue showed trace levels of PCB's and normal levels of inorganics. Sediment from the drainage cut between the ditch and the back-up pond showed moderately high levels of PCB's and inorganics. Both the pond water and pond sediment showed slightly elevated levels of PCB's and normal levels of inorganics.

North of Queeny Avenue: Water from two lagoons on the Eastern edge of Cerro Gordo Copper Company property north of Queeny Avenue showed trace levels of PCB's and moderately elevated levels of Copper, lead, nickel, phosphorous, and zinc. Sediment from these lagoons showed low levels of PCB's, but were not analyzed for inorganics. Also, a well was drilled by the Illinois EPA on Cerro Gordo Copper Company property approximately 20 yards west of the Dead Creek culvert and 20 yards north of Queeny Avenue. Ground-water from this well at approximately 16 ft. deep showed no PCB's, low levels of chlorobenzenes and chloroaniline, and moderately elevated levels of copper and zinc.

Air grab samples in Dead Creek were negative for non-disturbed soil conditions, as was long-term air monitoring. With the soil disturbed to promote vapor release, grab samples were positive for chlorinated hydrocarbons in the north end of the ditch, but negative in the south end

of the ditch. Also, for disturbed soil, long-term air monitoring was negative in the north end of the ditch, but showed trace levels of xylene in the south end of the ditch. These air analyses are inconclusive, except possibly to indicate that potentially harmful vapors are released only when the soil in the Dead Creek bed is disturbed.

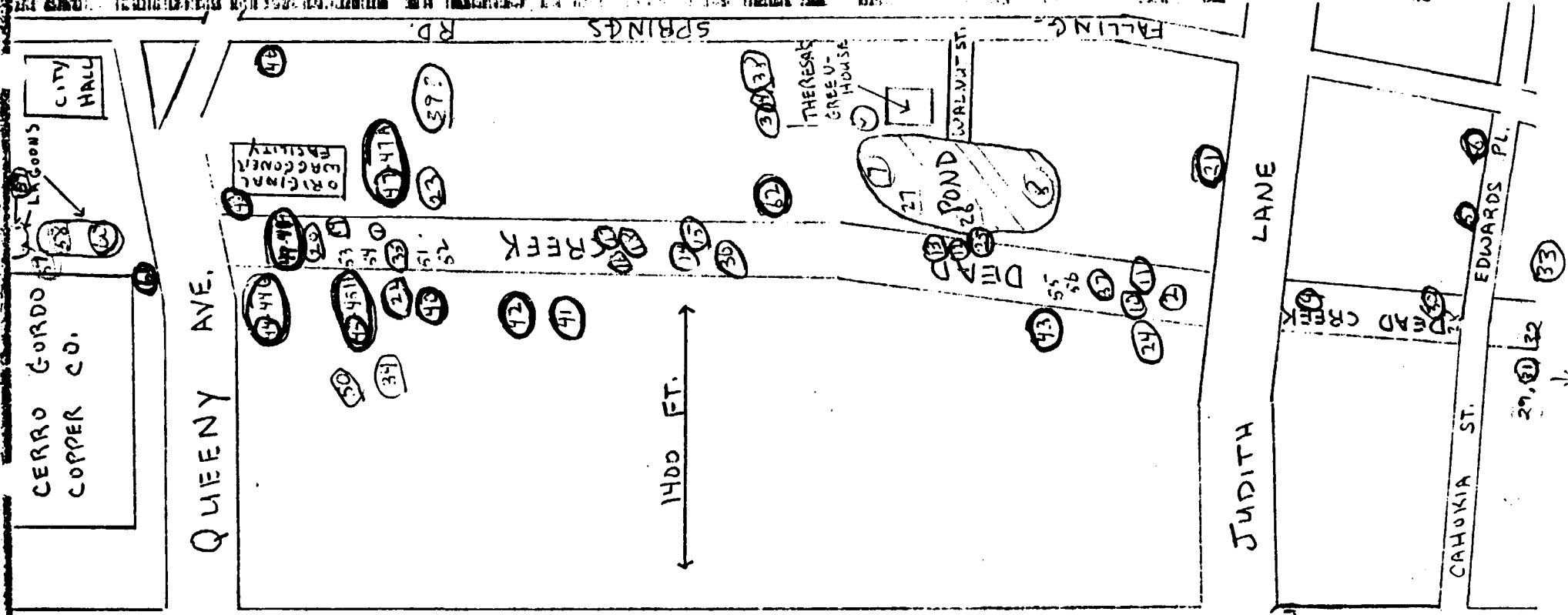
All drinking water wells in the area were sampled and found to be not contaminated.

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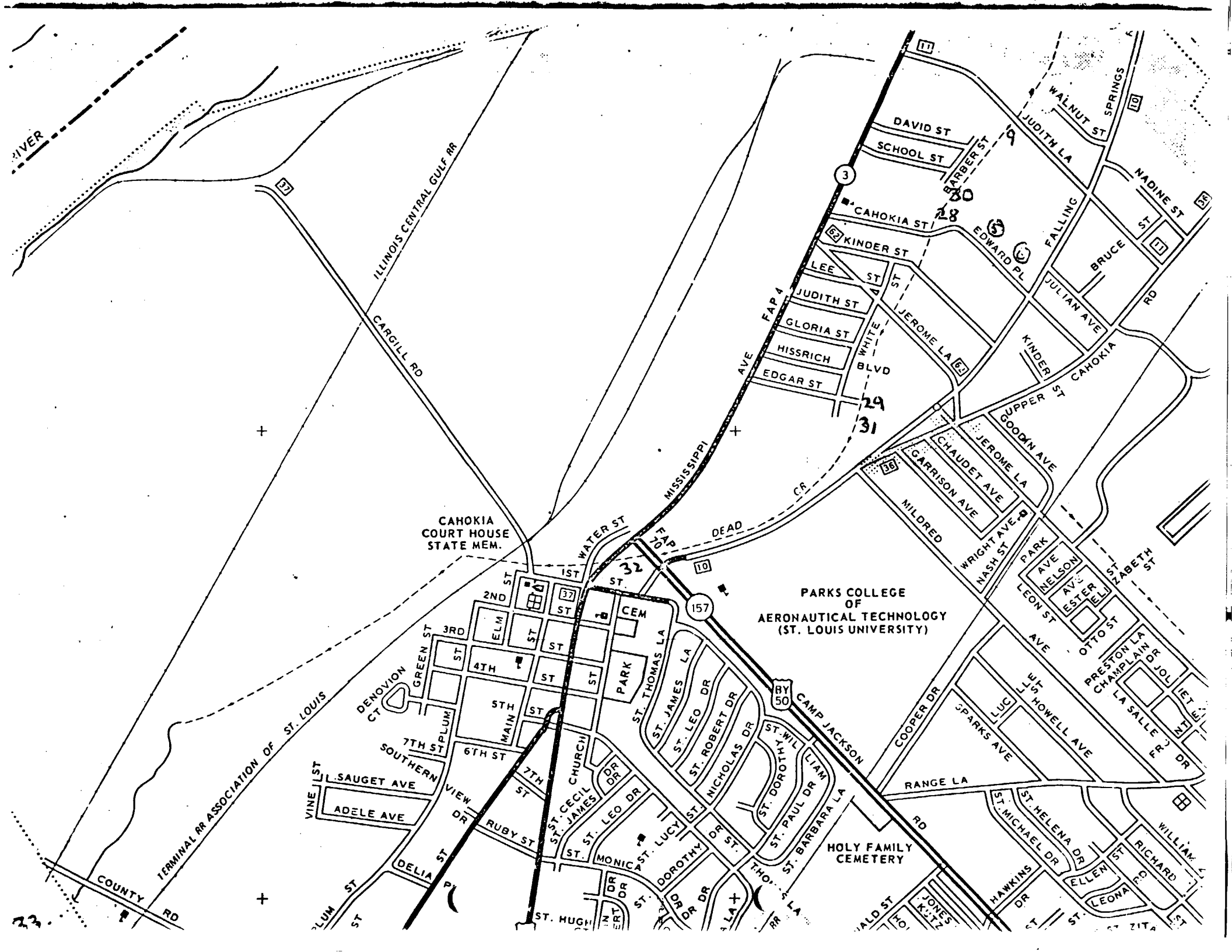
1) high concentration
copper

2) high concentration
metals

ILL. Hwy. 3



- soil - sediment (7)
- soil - subsurface (13)
- soil - surface (12)
- water - surface (6)
- water - well (18)
- bioassay (2)
- air (6)



TABLES OF LABORATORY ANALYSIS OF SAMPLES TAKEN SEPTEMBER 9, 1969

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ILLINOIS EPA LABORATORY ANALYSIS OF SAMPLES TAKEN SEPTEMBER 8, 1960

[illegible]

THROUGH October 31, 1980 FROM CAHOKIA DEAD CREEK AREA. (ALL RESULTS IN PPM UNLESS OTHERWISE STATED).

[illegible]

LEADS TO A PROBABLY ACCURATE OF SAMPLES TAKEN SEPTEMBER 8, 1969

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LABORATORY ANALYSIS OF SAMPLES TAKEN SEPTEMBER 9, 1950

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1999

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PHOTOGRAPH LABORATORY AGENT TO 3 SAMPLES TAKEN SEPTEMBER 6, 1960

[illegible]

THROUGH October 31, 1980 FROM CANOKIA DEAD CREEK AREA. (ALL RESULTS IN PPM UNLESS OTHERWISE STATED).

[illegible]

ILLINOIS EPA LABORATORY ANALYSIS OF SAMPLES TAKEN SEPTEMBER 8, 1960

[illegible]

THROUGH October 31 , 1980 FROM CAHOKIA DEAD CREEK AREA. (ALL RESULTS IN PPM UNLESS OTHERWISE STATED).														(Di) Chloro	(Tri) Chloro	Chloro-Nitro-	Dichloro-
CHEMICAL →	BARIUM	COPPER	LEAD	NICKEL	PHOSPHOROUS	ZINC	PCB's	CHLOR-DANE	Alkyl-Benzenes	BI-PHENYL	TOLUENE	XYLENE	Benz-ene	Benz-ene	Benz-ene	Phen-	
Soil Normals (PPM)	250	70	16	80	1180	132	*M.A.C 28 PPB	*M.A.C 50 PPB	*M.A.C 10-100 PPM	*M.A.C -	*M.A.C 118 PPM	*M.A.C 3 PPM	*M.A.C 5 PPM	*M.A.C 1-10 PPM	*M.A.C 10-100 PPM	*M.A	
Location ↓																	
51 Air - 20 yds. S. Queeny Ave. - Soil Disturbed	-	-	-	-	-	-	POSITIVE DETECTOR TUBE RESULT FOR					HALOGENATED HYDROCARBONS					
52 Air - 50 yds. N. Judith Lane - soil undisturbed and then disturbed	-	-	-	-	-	-	NEGATIVE DETECTOR TUBE RESULT FOR					HALOGENATED HYDROCARBONS					
M.A.C. for drinking water (PPM)	< 1	<1	<0.05	<1	<1	< 5.0	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONI	
53 Air- 40 yds S. of Queeny Ave., - undisturbed soil	-	-	-	-	-	-	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
54 Air - 40 yds. S. of Queeny Ave - disturbed soil	-	-	-	-	-	-	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
55 Air - 60 yds. N. of Judith Ln., undisturbed soil	-	-	-	-	-	-	N.D.	N.D.	N.D.	N.D.	N.D.	0.2	N.D.	N.D.	N.D.	N.D.	
56 Air-60 yds. N. of Judith Ln., disturbed soil	-	-	-	-	-	-	N.D.	N.D.	N.D.	N.D.	N.D.	0.2	N.D.	N.D.	N.D.	N.D.	
M.A.C. for surface water (PPM)	< 5.0	<0.02	<0.1	<1.0	< 1.0	<1.0	28 PPB	50 PPB	10-100 PPM	-	118 PPM	3 PPM	5 PPM	1-10 PPM	10-100 PPM	0.5 P	
57 Cerro Copper Co. Sediment - N. Lagoon	-	-	-	-	-	-	2	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
58 Sediment - S. Lagoon Cerro Copper Co.	-	-	-	-	-	-	13	N.D.	N.D.	N.D.	N.D.	N.D.	1.7	N.D.	N.D.	N.D.	
59 Water- N. Lagoon Cerro Copper Co.	1.2	4.5	6.6	4.2	1.9	30	22 PPB	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	
Health Effects →	Skin Effects & Respiratory Problems	Affects Kidneys Skin,	Causes Anemia & Aff-ects Kidneys	Affects Skin & Respir-atory System	Affects Liver, Skin, Blood, Teeth.	General-ly of low Toxic-ity.	Affect Skin, Eyes, Liver.	Affects Skin, Kidneys Liver.	Effect Lungs, Skin.	Toxic to CNS and lungs.	Affects Liver & Kidneys	Causes Liver & Kidney Diseases	Affects Liver, Lungs, Skin	Affects Liver, Lungs, Skin.	Affects Liver, Lungs, Skin	Affec CNS & Kidne	
N.D.=None Detected * M.A.C.=Maximum Allow-able Concentration (1/10 TL _m 96 for soil and surface water)																	

PHOTOGRAPH LABORATORY AND LTD OF SANITIZED TAKEN SEPTEMBER 8, 1960

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